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ABSTRACT

This paper examines the hypothesis that variations among white females, white males, non-white females, and non-white males in their degree of success in early schooling are related to differences in the life expectancy rates of those groups. Data are presented on the development and school performance of 450 North Carolina school children at the beginning and end of kindergarten and at the end of third grade. Data on the death rates and length of life expectancies of the four sex-race groups in North Carolina are then presented. Results indicate that the positions of the sex-race groups on stress-related school experience correspond to the positions of the groups on death rate data, also a stress-related matter. It was concluded that the risk factors for lower achievement are the same ones as for life expectancy: minority groups; males; and poverty. (JMB)

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Life Expectancy and School Experience

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ABSTRACT

Betty H. Landsberger, Ph.D. Life Expectancy and School Experience. February, 1978.

Certain race-sex groups in our soci ty are in a much worse position than others in terms of death rates and length of life expectancy. For all of the United States and for the one state of North Carolina, the focus of this study, it is white females who are the favored group, and non-white males are in the poorest position; white males and non-white females alternate in second and third position depending on the age-group. Mortality rates are higher for poor than for non-poor. Poverty, minority group status, and male sex can be regarded as risk factors from the standpoint of life expectancy. It is argued by many that the prominent causes of death are related directly and indirectly to increased stress experienced by the poor and minority groups in our society. In this article, a study is made of the beginning four years of school experience of these four race-sex groups in a statewide North Carolina sample of over 450 children. Studies exist to verify that doing less well than one's peers at school is a situation producing stress. The risk factors for lower achievement were indeed found to be the same ones as for life expectancy: minority group, male sex and poverty. On ability measures, achievement tests and social-emotional factors at the beginning and end of the first four years of school (kindergarten through third grade), the scores were highest for white females (all risk factors absent) and lowest for black males. White males were generally lower than white females, and black females lower than the white males. Poverty children of each race-sex group performed less well than the total, but the white female poverty group advanced in its position more than others did during the first four years of schooling. Empirical studies are of course needed, but it appears possible that school experience is a contributing factor to the observed differences in the groups' mortality rates. Those responsible for public education should ensure that schooling has the effect of minimizing rather than maximizing the risk status of well over half of the population served by the educational system.

Life Expectancy and School Experience

Betty H. Landsberger, Ph.D.

Introduction

The purpose of this paper is to propose that the variation among the four race-sex groups -- white female, white male, non-white female, non-white male -- in successful performance of tasks at school is possibly related to the very different life expectancy rates of those groups. It is the concept of stress which provides the conceptual linkage of these two. On the one hand, increasing attention is being paid to the fact that males do less well than females in school, and to the fact that this carries emotional consequences for males, consequences which have been equated with the concept "stress." On the other hand, students (Johnson, 1977, for example) of the rates of mortality in industrialized Western nations detect a pattern of illnesses and "external" causes of death which are on the increase, and hypothesize that beneath this pattern is an underlying set of psychobiologic conditions in which increased stress and resulting anxiety play large roles via characteristic behavior patterns and life styles. Many of these causes of death -- including various cerebrovascular diseases, lung cancer and alcoholism, as well as accidents and suicide -- are especially prominent in the case of males and minority group members. This suggests that some commonly experienced life conditions are giving rise to extra stress in the case of those population groups. A difference of at least fifteen years in life expectancy between white females and black males was reported for the U.S. population for 1974; this is sufficiently alarming that serious search for possible contributing causes is justified. This study represents one exploration in that direction.

A recent article by Lee and Voivodas (1977) directs attention to the risks involved for males due to the nature of their school experience. "It is the special nature of pupil role and its resulting interaction with sex role which has important and differential implications for boys and girls," they state (p.), and then examine this pupil role in the light of a substantial collection of research on the socialization of young boys and girls which goes on in school classrooms and child care centers. Recognizing what they call the problem of "crowd control" created for schools by their large numbers of partially-socialized youngsters, they understand why the pupil role has come to be what it is. They have this to say of its results:

> An examination of the characteristics of sex role and pupil role indicates that there is an uncanny correspondence between pupil role and the female sex role, while the exact opposite holds for the relationship between pupil role and the male sex role. One would expect, then, that boys would have a more difficult time adjusting to school than girls. (p. 108)

Lee and Voivodas fear pernicious long-run results for girls, maybe even more harmful than boys' problems, but there are already several sources of evidence of the difficulty for boys in "coordinating the conflicting demands" of the sex and pupil roles. They make this statement: "This conflict leads to demonstrable stress starting at the earliest school levels." (p. 109)

The message of the Lee and Voivodas article is a signpost pointing in the direction of even larger concerns and more alarming results which may be in some part attributable to these conflicting demands on the male sex. This occurs with the addition to the "sex risks" of those risks attached to minority group status and the condition of poverty. Both minority group membership and low socioeconomic condition (and of course they frequently come together) are associated with more failure than success in the pupil role. Causes and effects of this have been discussed by the psychiatrist James Comer in his article, "The Black American child in school" (1974). It was also the subject of investigation by Herbert Birch and Joan Gussow in their book, Disadvantaged Children: Health, Nutrition and School Failure (1970). The incidence of differential achievement levels itself has been the subject of many studies, the most substantial probably being that reported by the National Center for Health Statistics (1976).

Thus we begin to appreciate theoretically the extent to which the experience of attending school has very different results for affluent little white girls than it has for poor little black boys.

The plan of this article is to look at data at kindergarten beginning and end and then at the end of third grade from one population of children to see how well (or poorly) these different sex-race groups perform relative to each other. The data we examine are from North Carolina: all of those children entering kindergarten in 1970 for whom data exist through third grade, from a network of schools located across the state. We go on from there to examine quite different data for the sex-race groups from the state of North Carolina, namely, figures for death rates and length of life expectancy for 1975. The reader will see that there is indeed "uncanny correspondence" -- to echo Lee and Voivodas -- between the position of the sex-race groups on stress-related school experience and the data on death rates, also, as indicated above, a stress-related matter.

Data from School Experience

In Table 1, data are presented for comparing the development and school performance at kindergarten and third grade levels for the four sex-race groups.* The figure used in this table is the percentile equivalent of the Mean score for that group on each measure, percentiles being those based upon this cohort of approximately 450 children. In parentheses beside the group's total is a figure which represents the Mean score of the "poorest one-third" of that group of children.**

- - - - - -

* - For purposes of clarity, the material presented represents a selection of the total of measures available. Complete data are filed on data tapes available through the Institute for Research in the Social Sciences at the University of North Carolina - Chapel Hill.

** - Scores on the Home Information Scale, a quantitative measure of advantage of young children's home environment were used to obtain the "poorest one-third" of each group. It should also be noted that while the eighteen schools were representative of the state's population, the state is a poor one and very poor counties were, if anything, over-represented. Therefore, the "poorest one-third" is very poor indeed. This is discussed in a report of the Learning Institute of North Carolina (1971), and in the Health Resources Administration's report entitled "Health of the Disadvantaged" (1977). In the latter, North Carolina's ranking for poverty is very low: 41st among the 50 states (page 20).

Table 1. Percentile equivalents of Mean scores for a selection of variables at kindergarten beginning, kindergarten end and end of third grade for race-sex groups and for the poverty group for each.

	White				Non-white			
	Girls N, 122		Boys N, 122		Girls N, 91		Boys N, 64	
Beginning Kinderg.	Total	Poverty 1/3rd	Total	Poverty 1/3rd	Total	Poverty 1/3rd	Total	Poverty 1/3rd
Physical:								
Height	58	(53)	62	(60)	60	(54)	65	(63)
Cogn. Ability:								
Peabody Vocab.	60	(29)	65	(45)	24	(16)	22	(16)
Achievement:								
TOBE Math	66	(45)	65	(55)	36	(30)	30	(30)
Social-Emotional:								
CBI* Extraversion	52	(45)	53	(41)	37	(30)	31	(30)
CBI* Task Orient.	58	(34)	50	(25)	48	(38)	33	(41)
End of Kindergarten								
Physical: Height	48	(48)	60	(69)	60	(52)	69	(58)
Cogn. Ability:								
Peabody Vocab.	60	(28)	70	(41)	22	(14)	23	(18)
Achievement:								
TOBE Math	64	(46)	60	(40)	32	(24)	25	(22)
Social-emotional:								
CBI extraversion	46	(37)	46	(47)	45	(44)	30	(27)
CBI Task Orient.	57	(41)	49	(52)	51	(51)	35	(31)
End of Third Grade								
Cogn. Ability:								
Cogn. Abil. Test	61	(41)	65	(50)	30	(27)	24	(20)
Achievement**								
Reading	62	(45)	49	(40)	39	(37)	32	(30)
Spelling	58	(50)	45	(30)	45	(46)	33	(32)
Math Concepts	60	(55)	61	(59)	36	(37)	36	(30)
Social-Emotional***								
Social Maturity	59	(57)	41	(30)	37	(28)	25	(20)
School Affiliation	42	(41)	35	(29)	44	(39)	42	(41)

* - Classroom behavior Inventory, Schaefer and Aaronson (1968)

** - The Iowa Test of Basic Schools was used as the test for achievement in all cases.

*** - Self-Observation Scales (S.O.S.,, National Testing Service.

Percentile equivalents are useful for the comparisons made here because they express in a common form performances on testing done at different times on different measures having different ranges of scores. The percentile score also serves to indicate in a common form the place of any one group's averages relative to others.

- - - Place Table 1 about here - - -

An attempt to represent the Table 1 information in a simplified way is presented in Figure 1. The Median of the percentiles on the various measures at each of the points in time for each race-sex group's total and its poor one-third only (from the Table 1 information) was identified. These Median percentiles are plotted on the Figure 1 graph.

- - - Place Figure 1 about here - - -

The comparisons suggested by the "rough" indication of Median percentiles is actually borne out by thorough examination of the results. The white girls, with a Median percentile of 60, are well ahead of all at the end of third grade, so far that even the poor white girls are ahead of the other three race-sex groups by that time. White boys began kindergarten a little ahead of white girls (Median percentile of 62 compared to 58), though the poor of both sexes had the same Median percentile of 45. By the third grade, the Median percentile of white boys is under the 50th percentile, and that of the poor white boys is at the 40th percentile, almost at the same point as that of the total black girls' group. Among black children, both girls and boys, there is little difference between the Median of the poor one-third and the total group.* Black boys as a total group have a Median percentile well below that of the black girls.

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* - The same contrast has been found by many of the sociologists who have studied "Educational Attainment" at the high school level. Two relevant articles are Kerckhoff and Campbell (1977) and DeBoord, Griffin and Clark (1977).

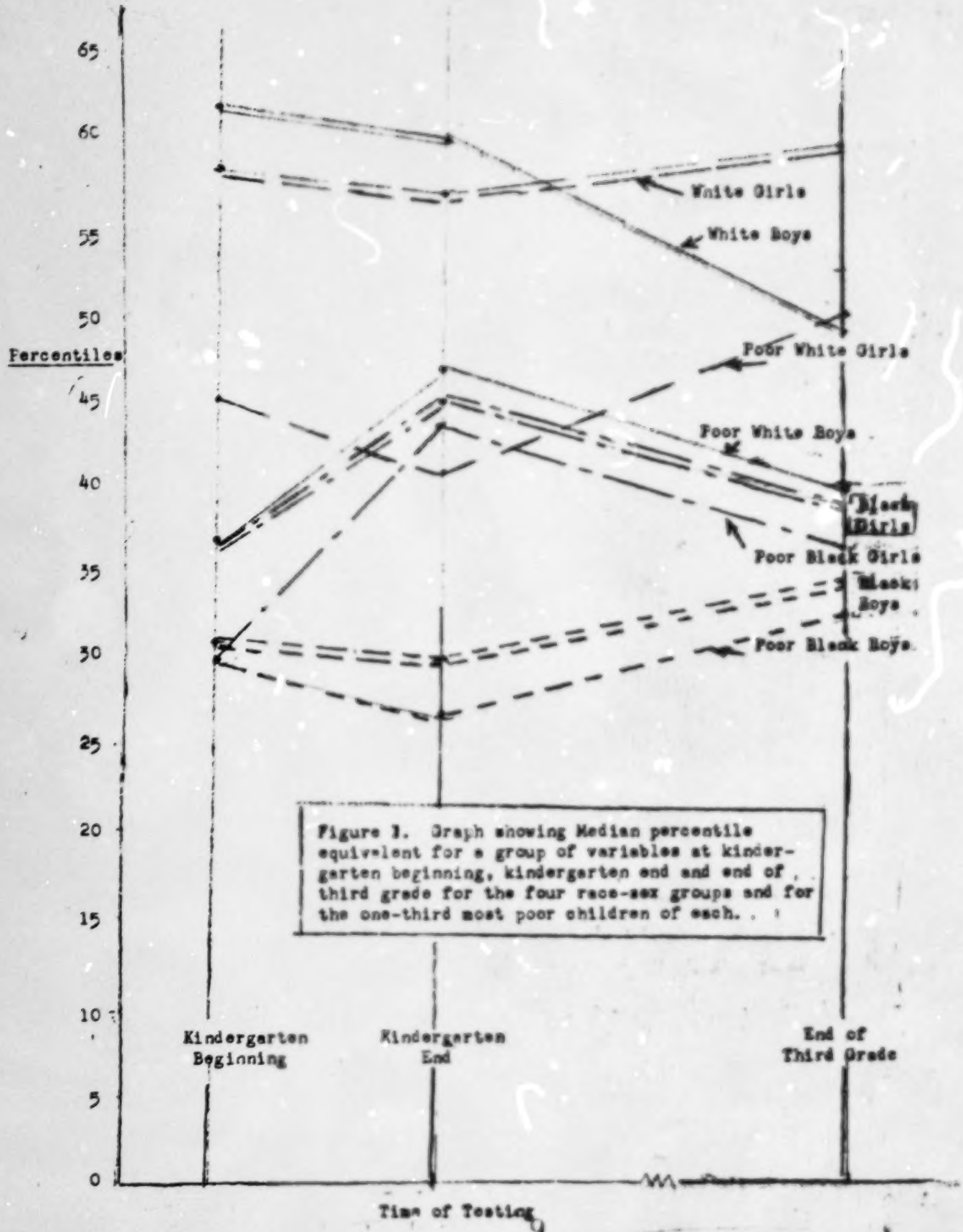


Figure 1. Graph showing Median percentile equivalent for a group of variables at kindergarten beginning, kindergarten end and end of third grade for the four race-sex groups and for the one-third most poor children of each.

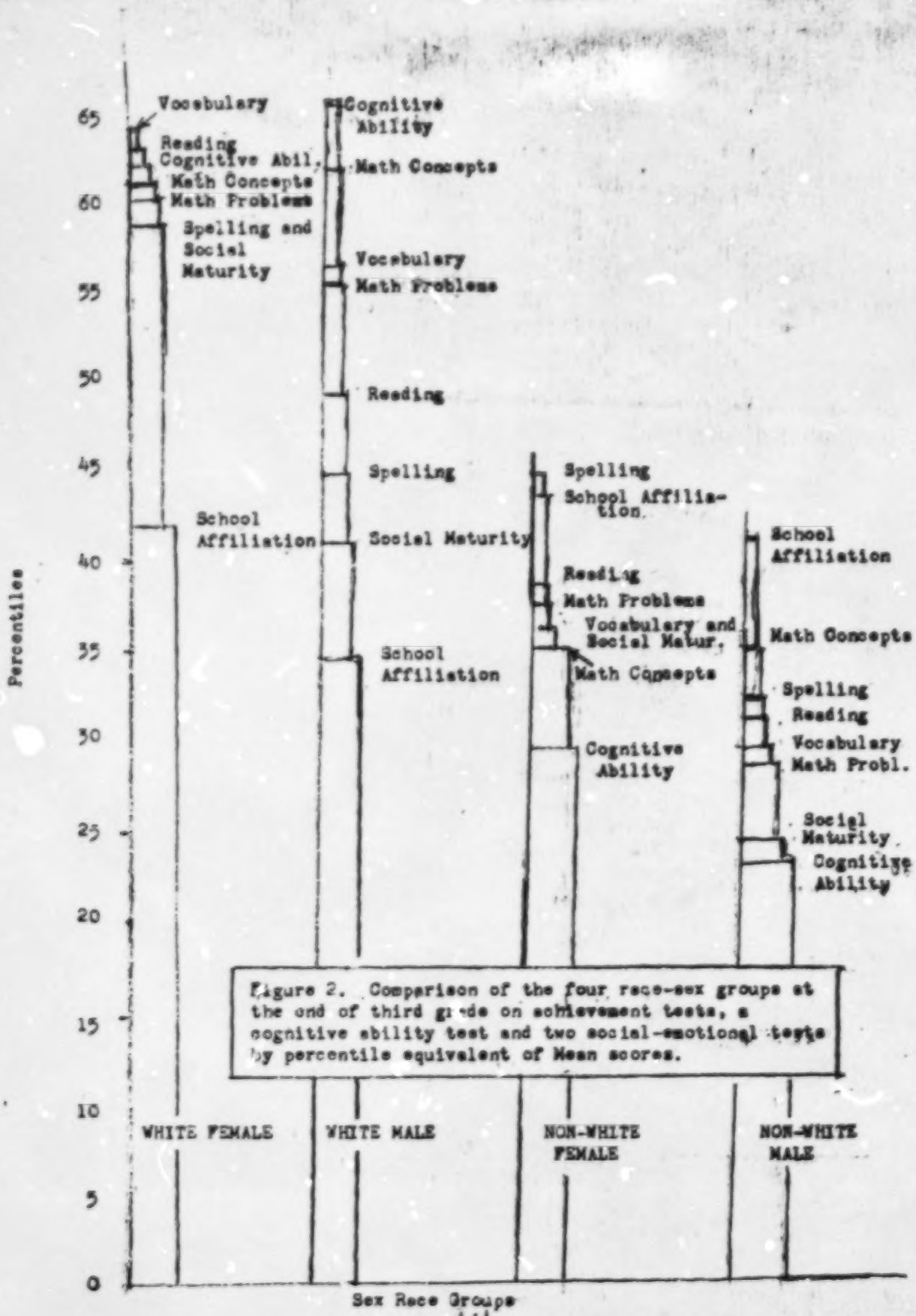


Figure 2. Comparison of the four race-sex groups at the end of third grade on achievement tests, a cognitive ability test and two social-emotional tests by percentile equivalent of Mean scores.

More complete information for the four race-sex groups' performances at the end of third grade is presented in Figure 2. The consistently high achievement levels for the white girls, as compared with the way much of white boys' performance falls far below the girls' is notable, together with the comparatively disadvantageous position of the black boys.

- - - Place Figure 2 about here - - -

While these differences as presented so far are suggestive rather than definitive, more sturdy evidence of two kinds is available. One of these is the congruence of results of other studies with these results, and we will turn to those in a moment. Statistical tests have been performed in a few instances to indicate whether these observed differences are in fact significantly different. It should be explained that an exhaustive examination of all differences on all variables has not yet been performed, but a few are available. First, at third-grade level, differences between boys and girls in some achievement tests and socio-emotional variables:

Between white boys and girls:

Third Grade Variables		Actual Difference between Means	"t"	Significance level
Achievement	Reading Subtest	5.6	2.33	.02
	Spelling Subtest	2.7	3.24	.001
Socio-Emotional	Social Maturity	5.0	4.74	.001
	School Affiliation	4.3	2.6	.01

Similar information for differences between black boys and girls:

Achievement	Reading Subtest	4.73	1.77	N.S.
	Spelling Subtest	3.76	3.4	.001
Social-Emotional:	Social Maturity	4.0	2.89	N.S.

In all of the cases cited, girls' Means are higher than boys', and Means for whites are higher than those of black children.

Previous research done in North Carolina in the mid-sixties involved a substantial sample of black and white children, over one thousand subjects in all, 40% of whom were white, 60% black. In that instance, the racial differences were also income-level differences, and many of the black were very poor. The authors, Baughman and Dahlstrom (1968), note ". . . marked disparity in family incomes between members of the Negro and white communities . . . . More than one-half of the Negro mothers reported total family incomes of less than $2,500, a level so low that they certainly must be considered as being impoverished. There are also white families with comparably low cash incomes, but they number less than 20% of those for whom inquiry was pressed." (page 5)

In our Figure 3 is presented a graph from their book, depicting SAT (Stanford Achievement Test) language scores for the race-sex groups between ages 9 and 14. The depressing fact would seem to be the decided increase over time in the distance below "normal expectation" for blacks of both sexes and for white boys. Results with other school subjects were similar to the language results.

- - - Place Figure 3 about here - - -

A report of the National Center for Health Statistics (1976) presented data on school achievement in both Reading and Arithmetic for a nationwide sample of 6 to 11-year-old children. They reported that white children consistently surpassed black children (the minority group of substantial size, population-wide), with statistically significant differences throughout, and that girls of both races surpassed the boys of their racial group at all ages on both Reading and Arithmetic, though not always sufficiently so to be significantly different.

Furthermore, the school achievement differences accompanying income differences for both races and both sexes are thoroughly and consistently portrayed in the same National Center for Health Statistics report. These differences, for each of the races by income of the family, are clearly visible in the graph from their publication which appears in Figure 4.

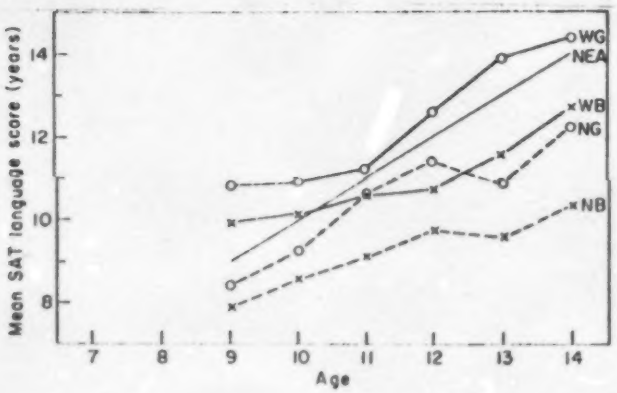
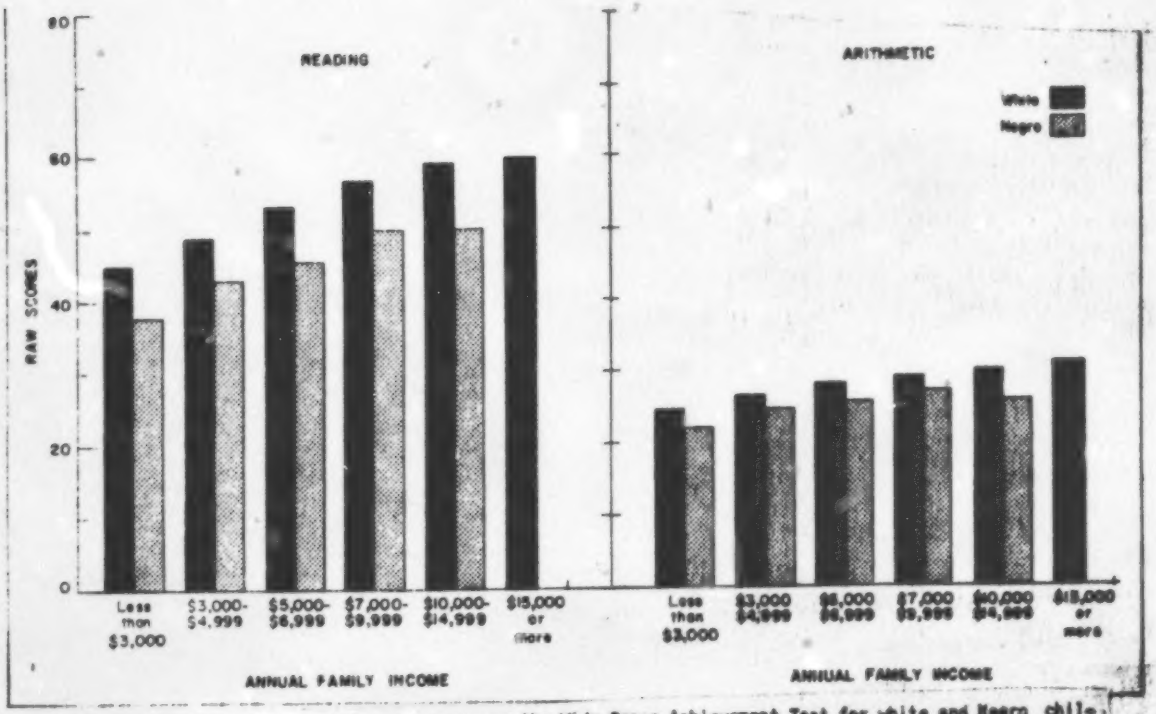


Fig. 4.5: Mean SAT Language scores for each sex of each race at six age levels (1961–62). WB = white boys. WG = white girls. NB = Negro boys. NG = Negro girls. NEA = normal expectation for age.

Figure 3. Graph depicting findings from the Baughman and Dahlstrom study (1968) of sex-race group differences on a language achievement test between 9 and 14 years of age.



Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for white and Negro children by annual family income, United States.

Figure 4. Comparison of school achievement by income and minority-majority status, with graphs from the National Center for Health Statistics Report, Series 11, No. 109: School Achievement of Children by Demographic and Socioeconomic Factors (1976).

In his recent book on Social Competence, Symptoms and Underachievement in Childhood (1977), Martin Kohn reports that both minority group (race-ethnicity) status and sex made differences in the achievement of the large number of children he followed from preschool through fourth grade in New York City schools. Results in that instance for males were poorer than for females both in terms of lower academic functioning and higher emotional disturbance. The findings thus agreed with his conclusion from examining the research literature: "Most of the investigators who have studied samples of normal children have found a larger number of boys exhibiting serious maladjustment than girls." (page 98)

Even more serious, however, was that the position of both sexes declined across these early years of school. Kohn concludes that "The damaging effect of school attendance on both the social-emotional functioning and academic attainment and educational backwardness emerges from the research reported . . . ." (page 127) Kohn's findings do indeed seem to tie together the fact of growing emotional disturbance with poor and declining school achievement in this population of relatively poor, mostly minority group children in a large city system.

These references to Kohn's work lead into the next step of our enquiry into the possibility of a relationship between lower school performance of some race-sex groups and their lower rates of life expectancy. As stated at the beginning, we propose that the link between the two is that many of the causes of death resulting in lower life expectancy for blacks of both sexes, and for white males, are "stress related." It appears to be true that blacks of both sexes and white males achieve less well in school, while white females achieve relatively well. To do less well in school than others would appear to mean enduring a stress-producing circumstance over a long period of years of school attendance, and may well be regarded as one cause among others in producing lower life expectancy rates for those race-sex groups who do achieve less well in that setting.

We have seen that Kohn, who made a long and expert study of the occurrence of emotional disturbance in his sample of children at the preschool-primary level, found, as had other investigators, that males functioned less well academically

and had higher emotional disturbance, Most of his sample, almost three-fourths, were minority-group children. He reported that in fact both sexes declined over the early years of school.

Baughman and Dahlstrom used the Minnesota Multiphasic Personality Test to study the state of the 14-year-olds of their sample, in the study mentioned above. They found Negro boys to be in the "deepest psychological trouble," white girls to have fewest problems, and white boys and Negro girls to be at a point close together between the two positions (Baughman and Dahlstrom, 1968, p. 467). We have already noted from their results that the order of the race-sex groups for achievement levels was the same, now-familiar pattern. Thus in both of these studies, there is evidence that poorer achievement levels were accompanied by more emotional disturbance; Lee and Vovodas had spoken of this for sex differences alone.

Race-Sex Groups and Life Expectancy in North Carolina

Differences in life expectancy among the four race-sex groups in the state of North Carolina, where we have examined the groups' school performance, have been published in a report from the State Health Planning and Development Agency (1976). The graph in Figure 5, taken from their report, presents clearly and impressively the different condition of chances for life and death for the four race-sex groups for various age-groups between 20 and 54 years of age.

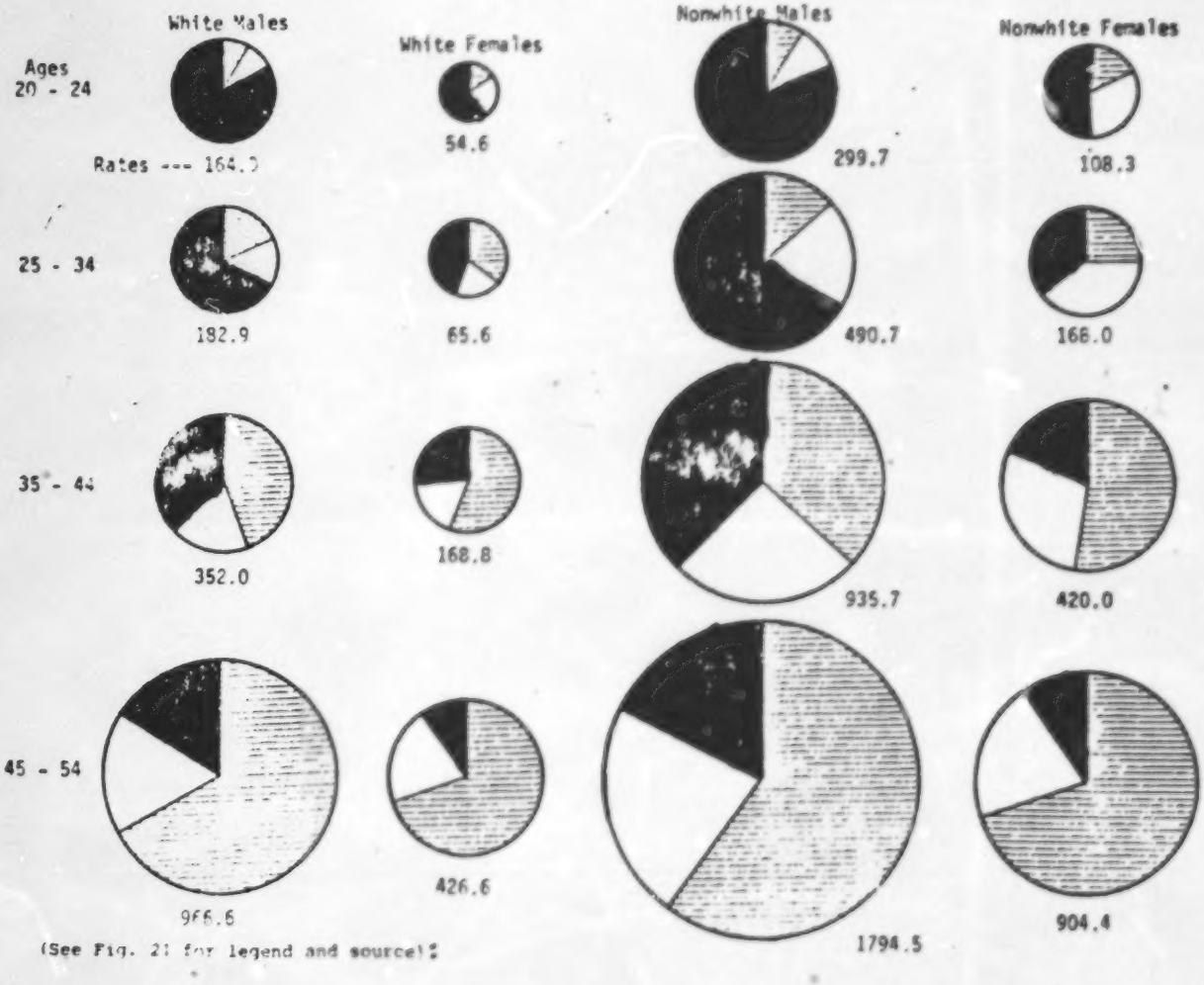
- - - Place Figure 5 about here - - -

Non-white males are unmistakably in the poor position, and just as unmistakably, white females are in the very good position. Non-white females and white males are between these two extremes, with white males being in the poorer position (3rd place) in all of the age-groups excepting the 35 to 44-year-old group, where non-white females' death rates are higher than those of white males.

- - - Place Figure 6 about here - - -

Figure 1. Graphic portrayal of North Carolina Mortality Rates, by Race and Sex*

Fig. 22: NORTH CAROLINA MORTALITY RATES, 1975, AGES 20-54, BY RACE AND SEX, SHOWING TWO GROUPS OF MAJOR CAUSES (Circle areas proportional to total death rates for each cohort)



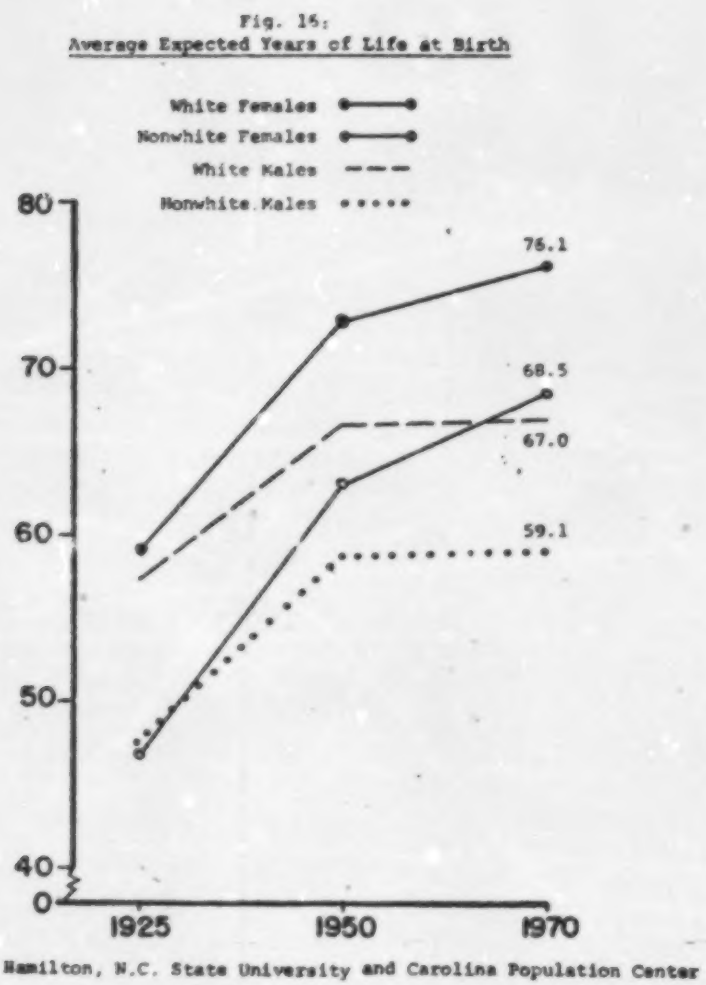
(See Fig. 21 for legend and source)

LEGEND: Major Chronic Diseases; Accidents and Violence; All other Causes.

SOURCE: Calculated from TAW data from the Public Health Statistics branch.

*State Health Planning and Development Agency, Selected Health Status and Demographic Data for North Carolina. Raleigh, North Carolina, 1976, page 45.

Figure 6. Life Expectancy Changes from 1925-1970 for sex-color group in N.C.*



*From State Health Planning and Development Agency, Selected Health Status and Demographic Data for North Carolina, Raleigh, North Carolina, 1976. Page 35.

The graph in Figure 6 shows changes in expected years of life at birth over the past 45 years in North Carolina. Again the picture is one where the relative position of the non-white male is clearly the worst of the quartet of race-sex groups. Non-white males have failed to make the progress whithe the others have made in the past five decades. White males have similarly failed in the last 25 years to keep up their earlier rate of progress, and by 1940 non-white females had a greater life expectancy rate than did the white males. Again, white females are far ahead of the other three groups.

- - - Table 2 goes about here - - -

Table 2 contains the figures for causes of death in the different race-sex groups to accompany the foregoing information from North Carolina on rates for death and life expectancy. Without taking note of all of the many details, we can find here some data for the stress and anxiety-related "killers", chronic ischemic heart disease, hypertension, and homicide. Rates for those causes of death all decrease as one goes down the progression from non-white male to non-white female, to white male to white female. When the two middle groups are exchanged and the progression becomes non-white male, white male, non-white female, white female, the order is that of death rates for the following causes: motor vehicle accidents, non-motor vehicle accidents, symptomatic heart disease and alcoholism. In the case of stroke, an important cause of death in all groups, the rates for non-white males and females again are in first and second position, but for this cause of death, white females lead white males.

- - - - Place Figure 7 about here - - -

Table 2. Causes of Death in North Carolina by Sex and Color Groups.*

Appendix B--North Carolina, 1975

20 LEADING CAUSES OF DEATH BY RACE AND SEX--NUMBER, RATES PER 100,000 POPULATION, AND RANKS

63

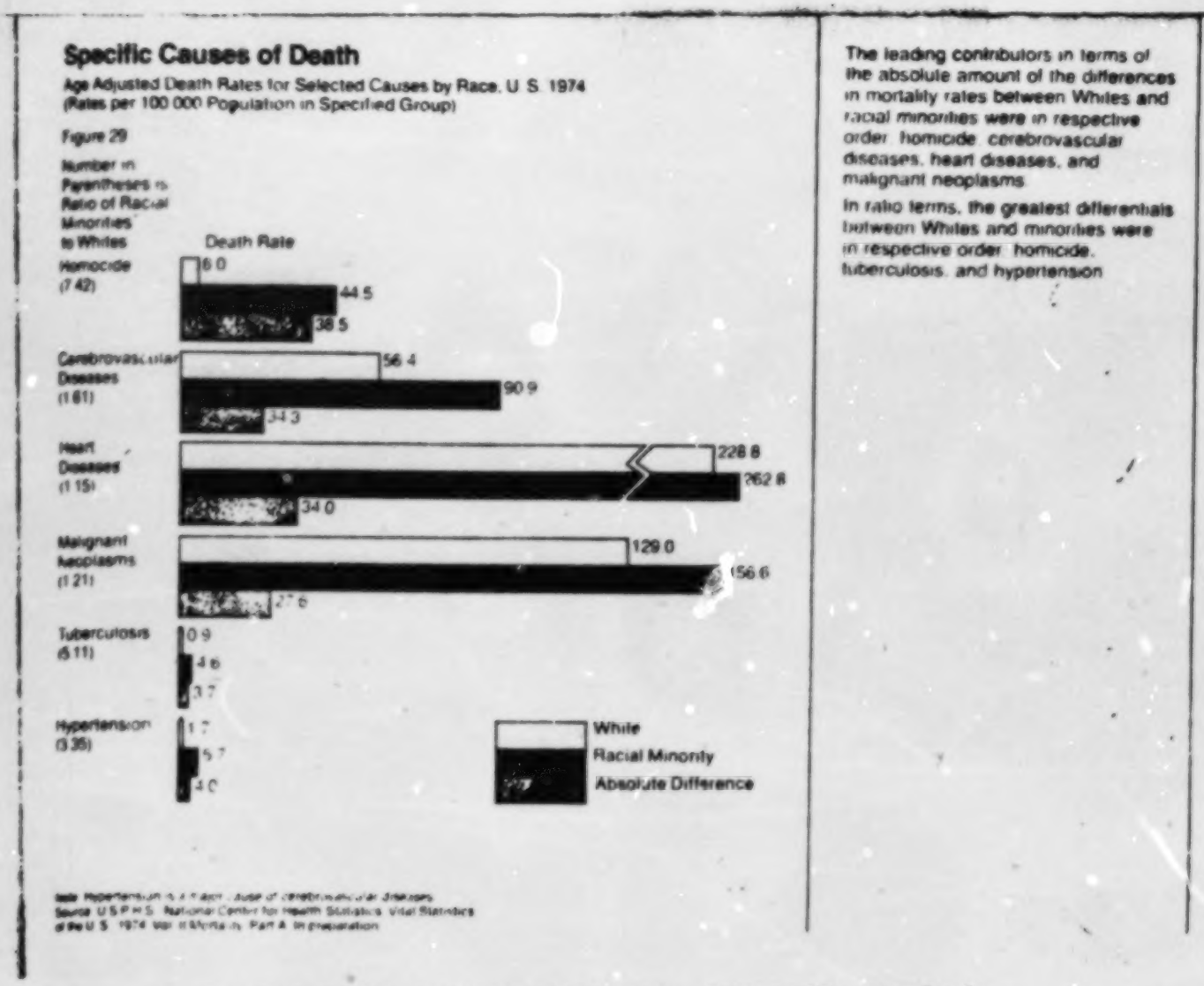
Leading Causes	TOTAL POPULATION Number	Rank	Rate	WHITE MALES Number	Rank	Rate	WHITE FEMALES Number	Rank	Rate	NONWHITE MALES Number	Rank	Rate	NONWHITE FEMALES Number	Rank	Rate
TOTAL DEATHS	45760		839.5	19916		971.2	14002		654.7	6765		1126.9	5077		767.5
Acute myocardial infarction	8396	1	154.1	4682	1	224.4	2315	2	108.2	849	1	141.4	632	3	95.5
Chronic ischemic heart dis.	6494	2	119.1	2510	2	122.4	2347	1	109.7	819	2	136.4	816	1	123.7
Stroke	5251	3	96.3	1697	3	82.8	2099	3	98.1	738	3	122.1	722	2	109.1
@Hypertension	2102	4	38.6	685	7	33.4	627	4	29.3	397	5	66.1	393	4	59.4
Non-motor vehicle accidents	1735	5	31.8	837	5	40.8	331	9	15.5	434	4	72.3	133	9t	20.1
Lung cancer	1731	6	31.8	1139	4	55.5	255	15	11.9	282	8	47.0	55	.....	
Motor vehicle accidents	1524	7	28.0	833	6	40.6	262	13	12.3	324	7	54.0	105	13	15.9
Pneumonia	1257	8	23.1	546	9	26.6	410	7	19.2	194	12	32.3	107	12	16.2
Symptomatic heart disease	1201	9	22.0	528	10	25.7	322	11	15.1	198	11	33.0	153	6t	23.1
Diseases of arteries	1196	10	21.9	500	13	24.4	435	6	20.3	128	15	21.3	133	9t	20.1
@Alcoholism	1116	11	20.5	517	11	25.2	218	16	10.2	241	9	40.1	140	8	21.2
Emphysema & associated	955	12	17.5	660	8	32.2	185	17	8.7	82	.....		28	.....	
Digestive diseases (-cirr)	934	13	17.1	377	14	18.4	330	10	15.4	130	14	21.7	97	15t	14.7
Diabetes	863	14	15.8	255	18t	12.4	293	12	13.7	113	16	18.8	202	5	30.8
Neoplasms of colon/rectum	826	15	15.2	304	16	14.8	331	8	15.5	87	20	14.5	104	14	15.7
Certain neonatal causes	815	16	15.0	275	17	13.4	170	19	7.9	217	10	36.1	153	6t	23.1
Homicide	779	17	14.3	255	18t	12.4	66	.....		361	6	60.1	97	15t	14.7
Suicide	738	18	13.5	516	12	25.2	166	20	7.8	45	.....		11	.....	
Secondary neoplasms	663	19	12.2	217	20	10.6	258	14	12.1	96	19	16.0	92	17	13.9
Breast Cancer	641	20	F22.9	.....			508	5	23.8	.....			133	9t	20.1
Cancer of prostate	509			317	15	15.5				192	13	32.0			
Infective & parasitic dis.	456									106	17	17.7	82	18t	11.9
Symptoms, ill-defined	413									97	18	16.2	78	20	11.3
Cancer of ovary	206						174	18	8.1						
Cancer of cervix	179												82	18t	12.4
Total in top 20 each group:	37435		686.7	16981		828.1	11496		537.5	5689		947.7	4160		628.9
All other deaths	8325		152.7	2935		143.1	2506		117.2	1076		179.2	917		138.6

Note: Top 20 totals for race-sex groups do not equal that for total population since the top 20 ranked categories are different for each.

@Hypertension is a nonexclusive category most of whose deaths are also within stroke and myocardial infarction; duplications are removed in totals and top 20 totals.

@Alcoholism is an aggregated category including cirrhosis of liver and a small number of "accidental poisoning by alcohol," the latter also in non-motor accidents; duplications are removed in totals.

*From State Health Planning and Development Agency. Selected Health Status and Demographic Data for North Carolina, Raleigh, North Carolina: 1976.


Specific Causes of Death
Age Adjusted Death Rates for Selected Causes by Race, U S 1974
(Rates per 100 000 Population in Specified Group)
Figure 29
Number in Parentheses is Ratio of Racial Minorities to Whites
Death Rate
Homocide (7 42)
8 0
44 5
38 5
Cerebrovascular Diseases (1 61)
56 4
90 9
34 3
Heart Diseases (1 15)
228 8
262 8
34 0
Malignant Neoplasms (1 21)
129 0
156 6
27 6
Tuberculosis (5 11)
0 9
4 6
3 7
Hypertension (3 35)
1 7
5 7
4 0
White
Racial Minority
Absolute Difference
The leading contributors in terms of the absolute amount of the differences in mortality rates between Whites and racial minorities were in respective order homicide, cerebrovascular diseases, heart diseases, and malignant neoplasms
In ratio terms, the greatest differentials between Whites and minorities were in respective order homicide, tuberculosis, and hypertension

Note: From Health of the Disadvantaged. Hyattsville, Maryland: Health Resources Administration. 1977. (DHEW Publication No. HRA 77-628) Page 23.

Figure 7. Minority-majority racial group differences in selected causes of death.

In Figure 7 is a bar graph from the Health Resources Administration publication, "Health of the Disadvantaged."(1977) This nationwide study found "the leading contributors in terms of the absolute amount of the differences in mortality rates between whites and racial minorities were in respective order: homicide, cerebrovascular disease, heart diseases and malignant neoplasms." (p. 23)

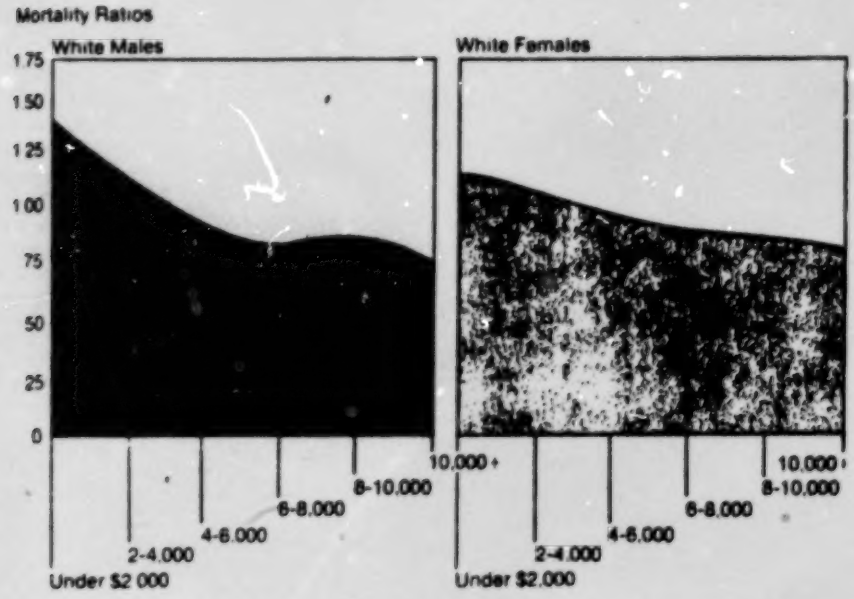
Poverty also was found in this study to be an additional factor bringing risk of performing less well in school. Data regarding differential mortality rates by socioeconomic status have been assembled by Kitagawa and Hauser (1973), using figures for the U.S. population. It must be repeated, there is proportionately so much more poverty in minority racial groups that the already-noted differences in death rates by racial groups inevitably reflect the influence of poverty. When it comes to school performance, we have seen that the poorest one-third of children from each one of the race-sex groups does less well in school than that group as a whole. Therefore, we want to take note of available findings which speak to the separate influence of poverty on mortality rates. Results from Kitagawa and Hauser together with studies from the National Center for Health Statistics have been summarized in graphic form in the aforementioned publication, "Health of the Disadvantaged"(1977). The graph presented in Figure 8 from that source, illustrates the mortality differences by income level for whites alone. The following summary statement appears in that report: "In 1960 the lowest income group had a 60% higher mortality gate than the highest income group."(p.21)

- - - - Place Figure 8 about here - - - -

Mortality – Income

Mortality Ratios by Level of Family Income (Standardized for Age) for White Family Members 25-64 Years of Age, by Sex, U.S. 1960

Figure 25 (See Table 10)



Note: The mortality ratio is a comparison between the death rate of a particular income group with the death rate for all income groups. An adjustment is made for the difference in age between the particular income group and all income groups.

Source: Kitagawa, Evelyn M. and Philip M. Hauser. Differential Mortality in the U.S.: A Study in Socioeconomic Epidemiology. Harvard U. Press. Cambridge, Mass., 1973.

Note: From Health of the Disadvantaged. Hyattsville, Maryland: Health Resources Administration. 1977. (DHEW Publ. No. HRA 77-628) Page 21.

Figure 8. Relationship of poverty and mortality.

Conclusion

This paper set out to make a case for a possible relationship between school experience and differential life expectancy rates for the different race-sex groups. The factor of poverty was examined in addition to the matter of race and sex. These findings, together with results of other studies, seem to suggest that through the concept of "stress," such a relationship is indeed possible. Empirical studies focused upon the actual differential experience at different ages throughout the school years of the four race-sex groups are needed as a next step.

There does seem to exist reasonable evidence for the statement that some population groups are placed at risk for achieving successfully in school. Specifically, membership in the non-white or minority group according to race; membership in the male sex; and to be poor: each of these factors seems to accompany poor achievement in school. There is evidence that these factors are related to the incidence of stress in the form of emotional disturbance among school children. These are, as we have seen, also risk factors in relation to life itself.

To do poorly in school is bad enough in its immediate and short-run consequences. It is even more serious if it does indeed contribute to stress-related illnesses and to "earlier than necessary" death for some of our population groups. Perhaps a spot with urgent need for affirmative action programs is to benefit those groups at risk in their school experience, beginning at least at the kindergarten level. Surely public education should play the role of minimizing rather than maximizing the risk status of well over half of the population it is supported in order to serve.

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